# Richmond Refinery LPS Bulletin-Reliability Poly-Feed Drier Early Regeneration (6/19/2011)

**IMPACT ERM#** 14089

**Location:**
**Poly Plant**
**Cracking Division**

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Visual of fatty acid build-up in caustic storage tank T-1829.

Visual of clean storage tank T-1829

## Incident Description:

Poly feed driers, V-610A/B, lasted only approximately 6.5 months instead of the expected 18 months. As a result, an early plant pit stop of the V-610A/B was required to change out the drier desiccant. The pit stop cost approximately $80,000 for desiccant and ~$200,000 for maintenance.

## Investigation Findings:

1) Poly Propylene Glycol and Oleic Acid (fatty acid) are suspected to originate in the #3H2S plant as the antifoam gets carried with the feed into the caustic feed treating section of the Poly Plant.
2) Once the contaminants, Poly Propylene Glycol and Oleic Acid, have built to high enough concentrations they are carried over into the driers, dragging caustic with them, and damaging the desiccant.

## Lessons Learned :

1) Adequate monitoring should be put in place around the feed effluent treating system for contaminants that may damage the drier desiccant.

## Recommendations:

1) Set up process monitoring methods for identifying contaminants in the feed before they reach dangerous levels. Such monitoring methods should include:
    - Develop a pH monitoring plan on reactor feed water washer, V-604 and water coalescer, V-606
    - Perform periodic visuals on caustic storage tank,T-1829, to see if fatty acids are building up

2) Trend antifoam injection rates at the #3H2S plant to try to prevent unnecessary addition into the system that may carry-over into the Poly plant and cause damage to the drier desiccant.

## Tenets of Operations Violated:

None